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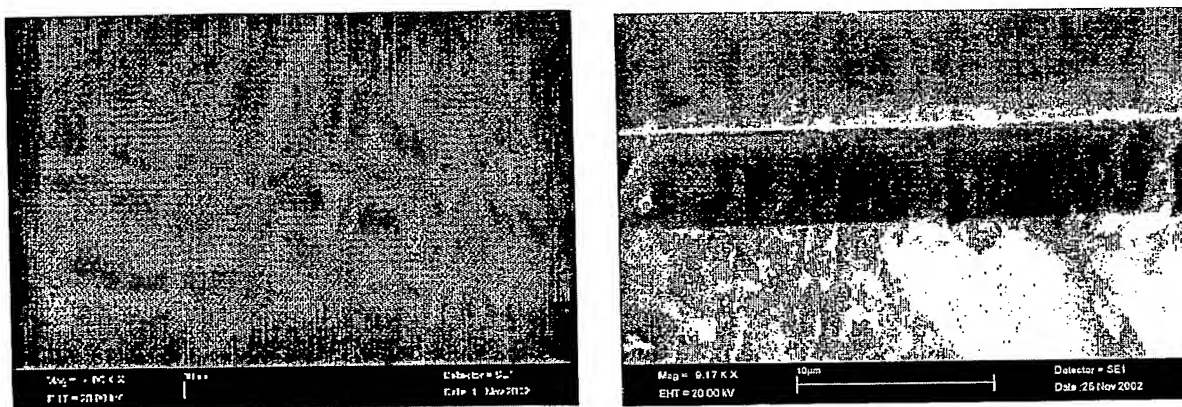


Fig. 1

Film of germanium sulphide deposited on a calcium fluoride substrate,  
showing topview (left) and cleaved edge (right)

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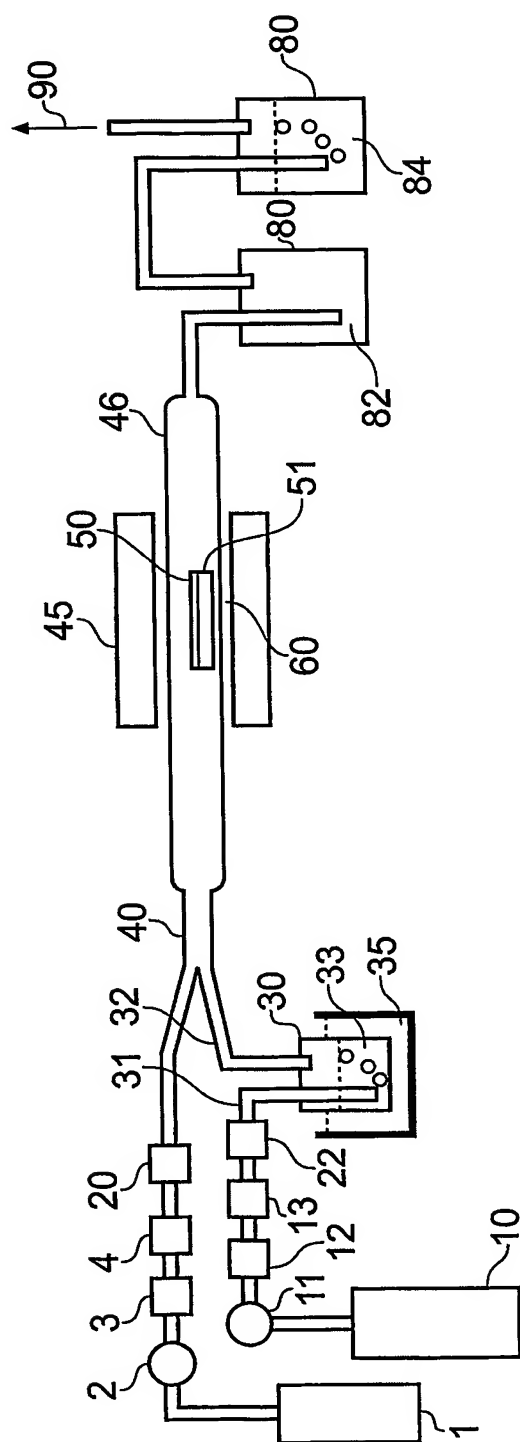
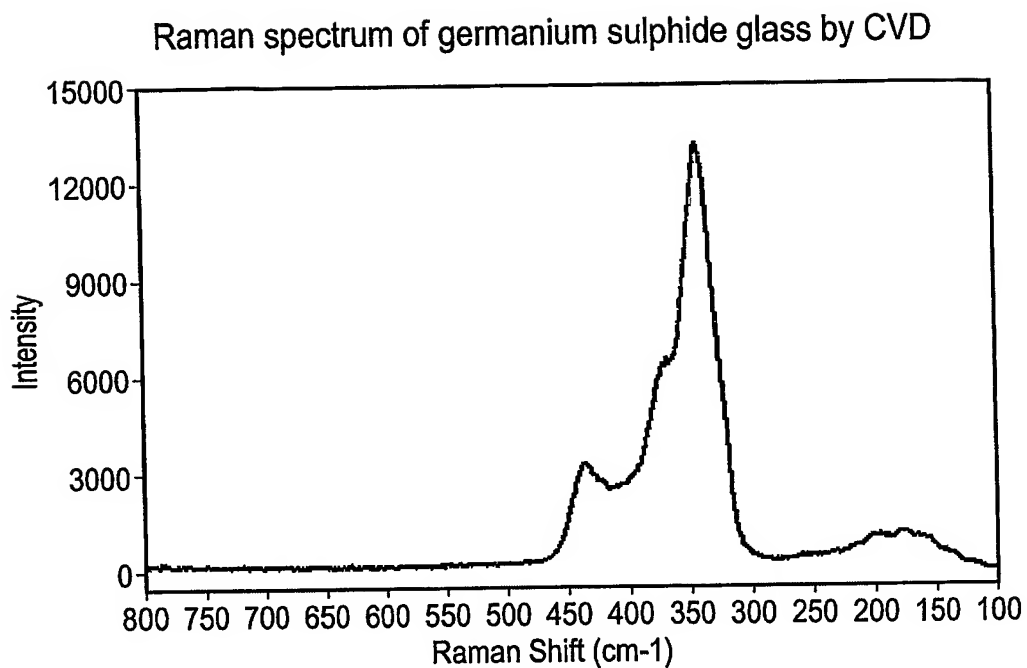


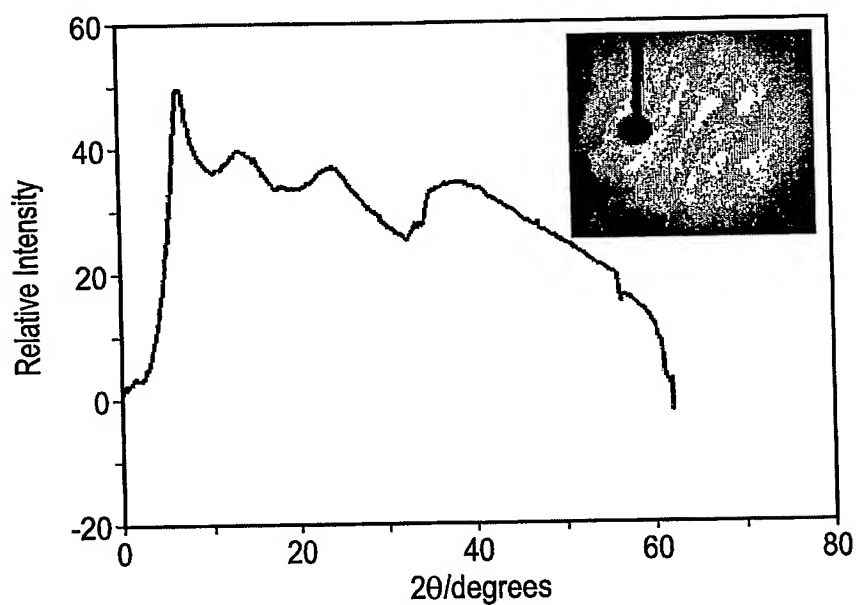
Fig. 2

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**Fig. 3**

Shows the typical Raman spectrum of germanium sulphide glass thin film by chemical vapour deposition (CVD)

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**Fig. 4**

Shows the typical X-ray diffraction (XRD) pattern of germanium sulphide glass thin film by chemical vapour deposition (CVD)

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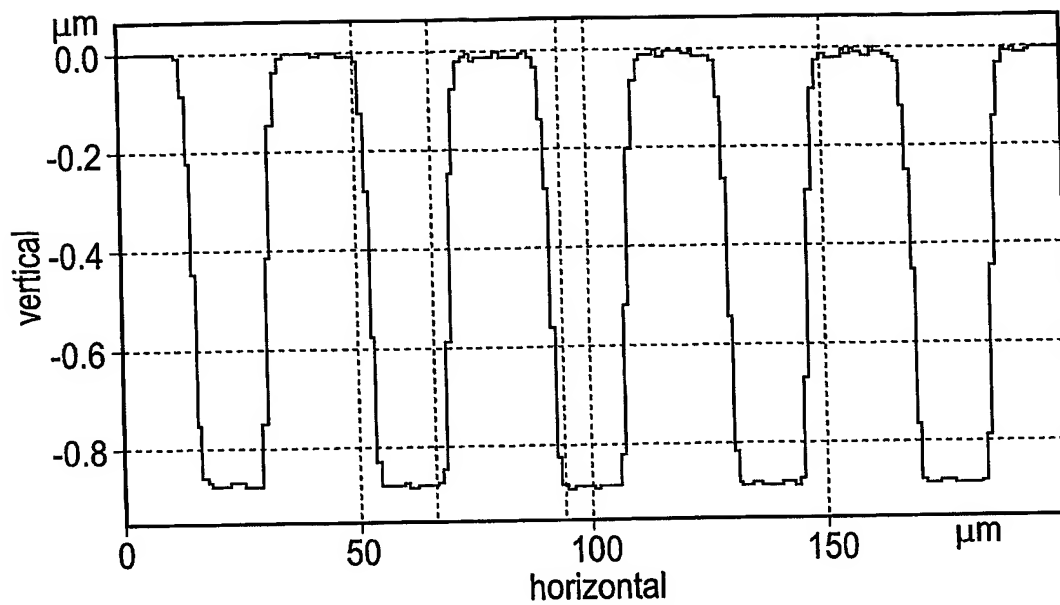


Fig. 5

Shows the Alpha-step profile of rib structures of germanium sulphide glass waveguide by photolithography and Ar ion-beam milling

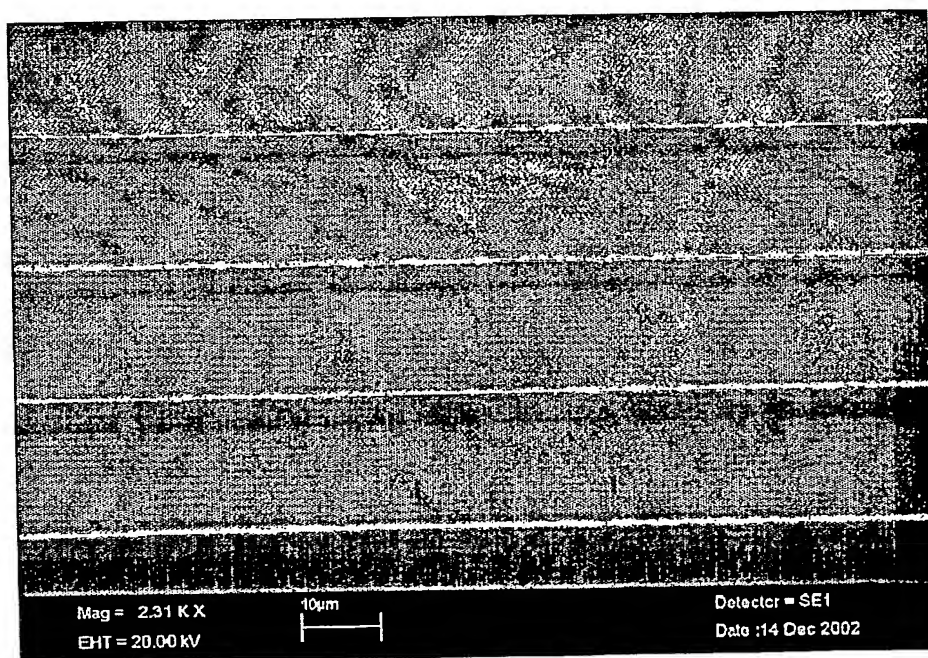


Fig. 6

Shows the SEM picture of rib structures of a germanium sulphide glass waveguide fabricated by photolithography and Ar ion-beam milling

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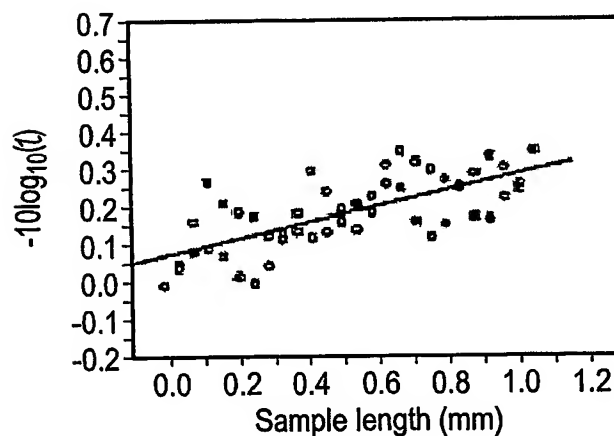
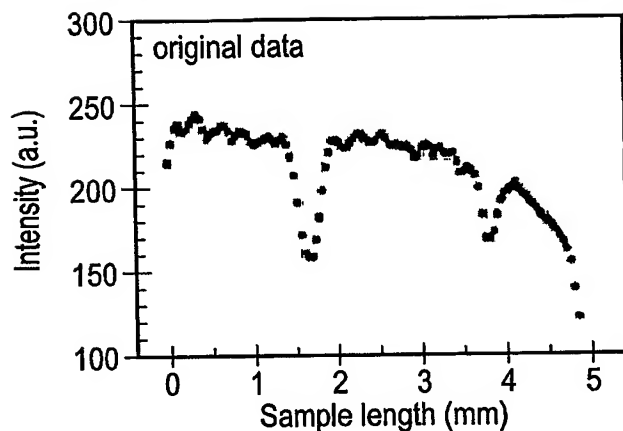
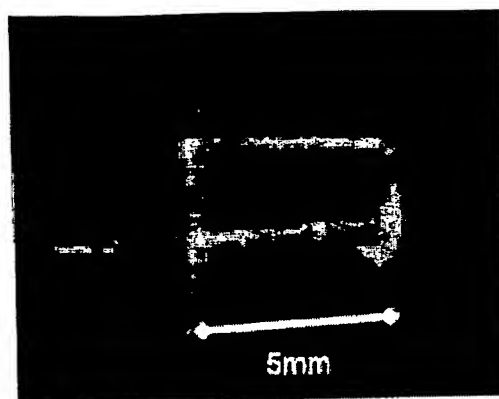
CVD R21S3 GeS<sub>x</sub> glass waveguide loss measurement

Fig. 7

Illustrates the guiding of light by the rib structures formed from germanium sulphide glass thin films by photolithography and etching and the experimental analysis used to assess the optical waveguide transmission loss

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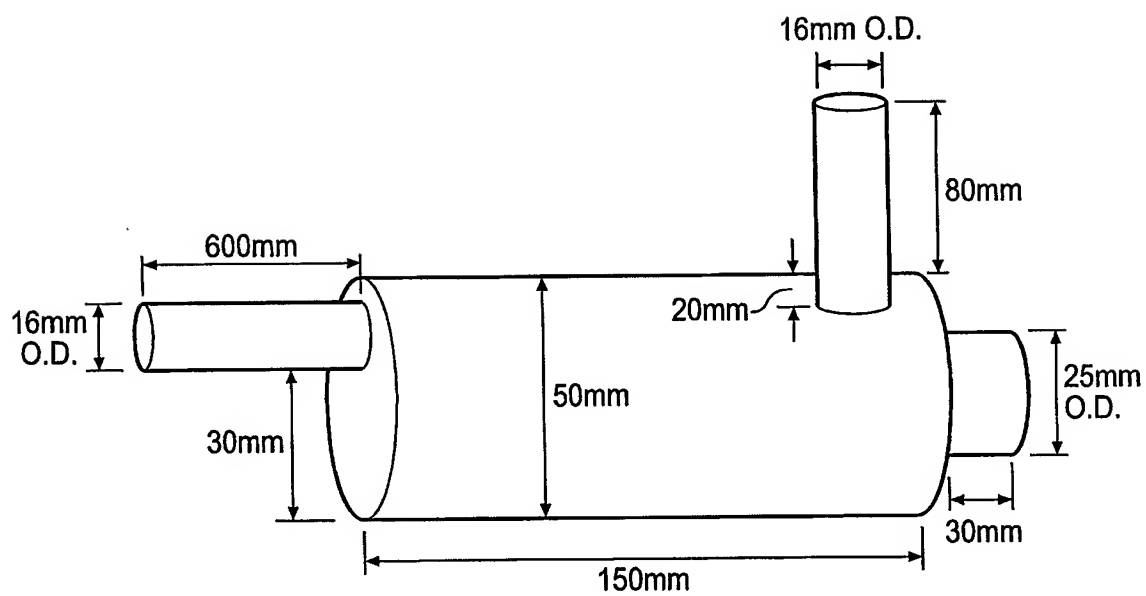


Fig. 8  
Bulk Glass Deposition Apparatus

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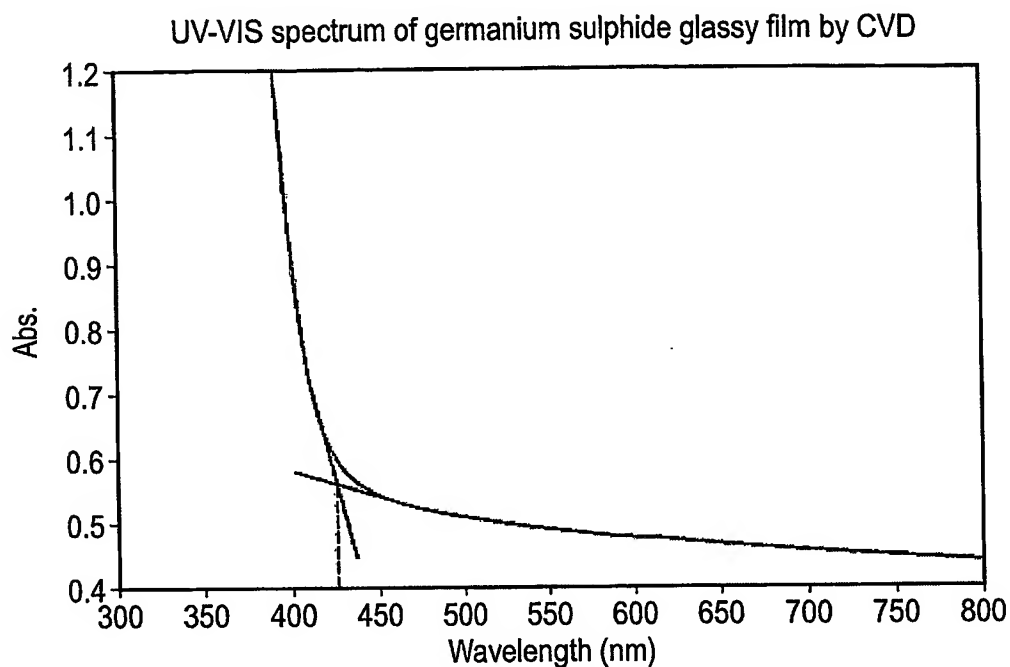


Fig. 9

Shows the typical UV-VIS spectrum of germanium sulphide glass by CVD

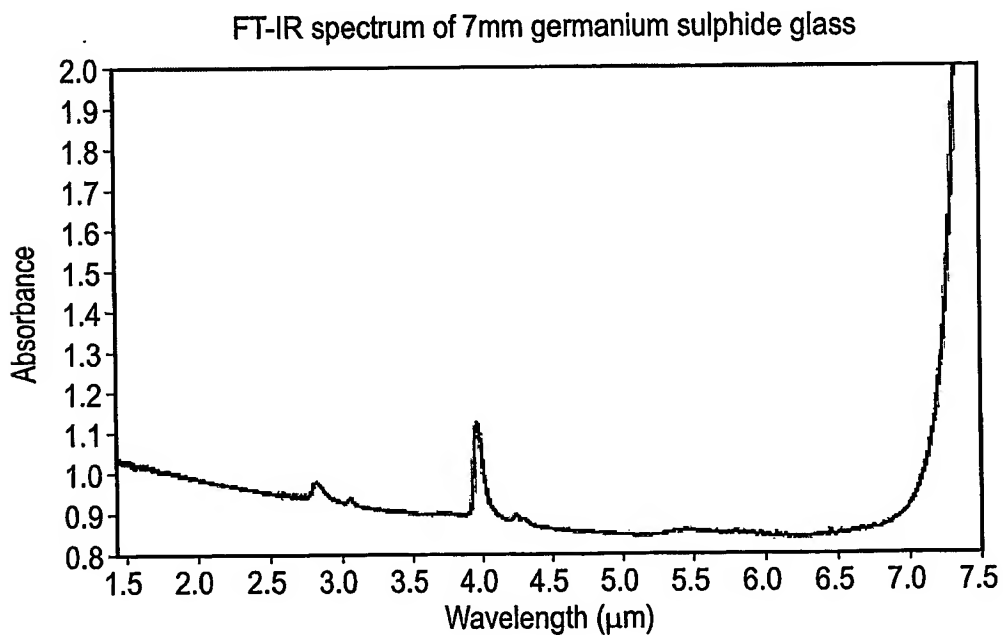


Fig. 10A

Infrared transmission spectrum of a bulk  $\text{GeS}_x$  glass sample



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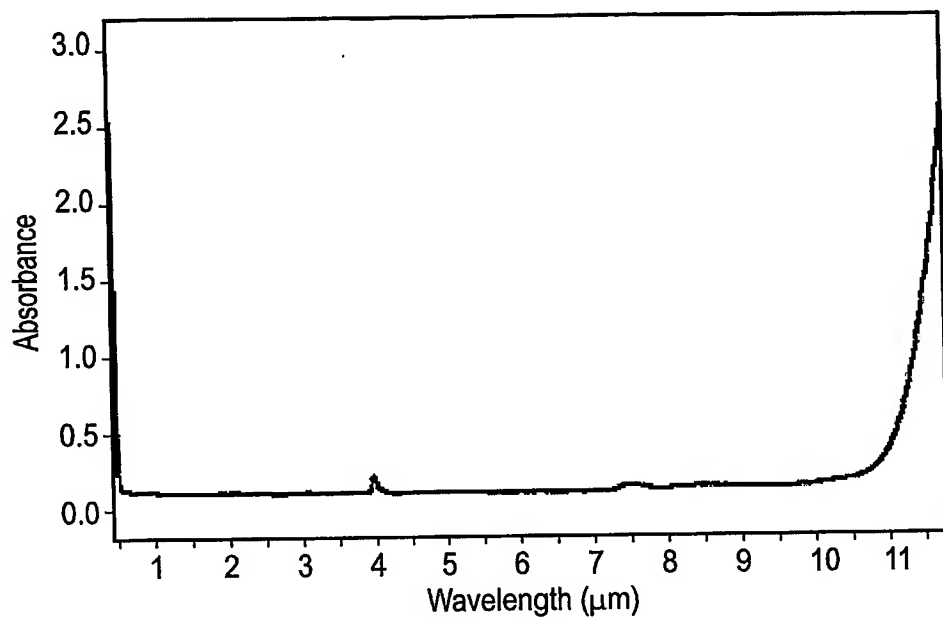


Fig. 10B

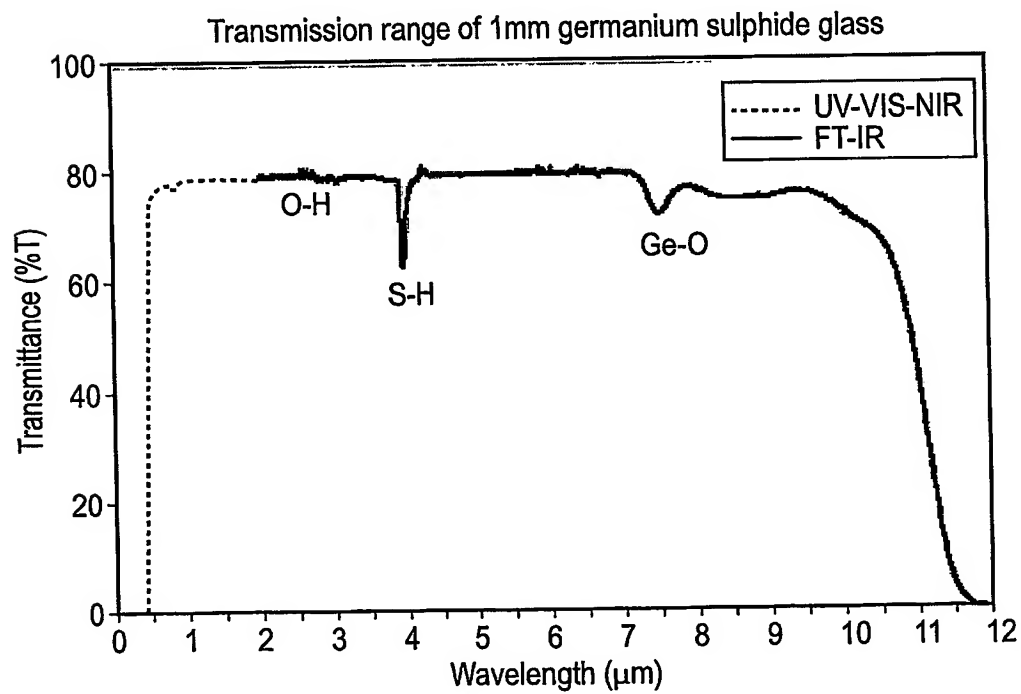


Fig. 10C

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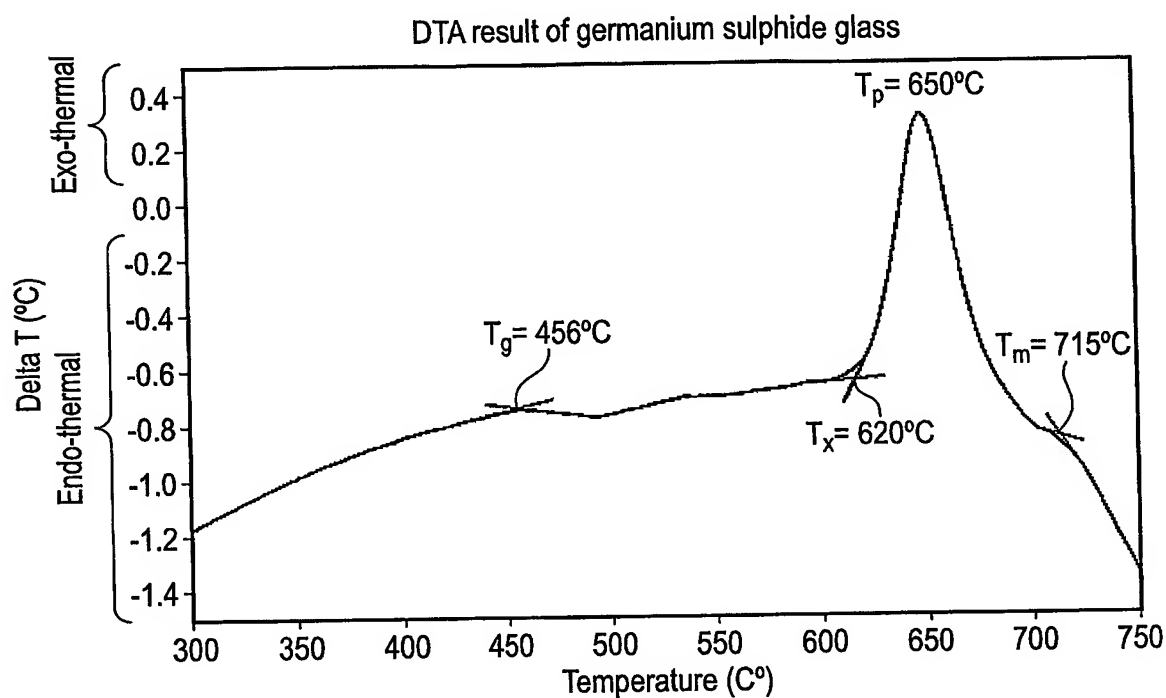


Fig. 11

Shows the thermal properties of germanium sulphide glass by DTA analysis

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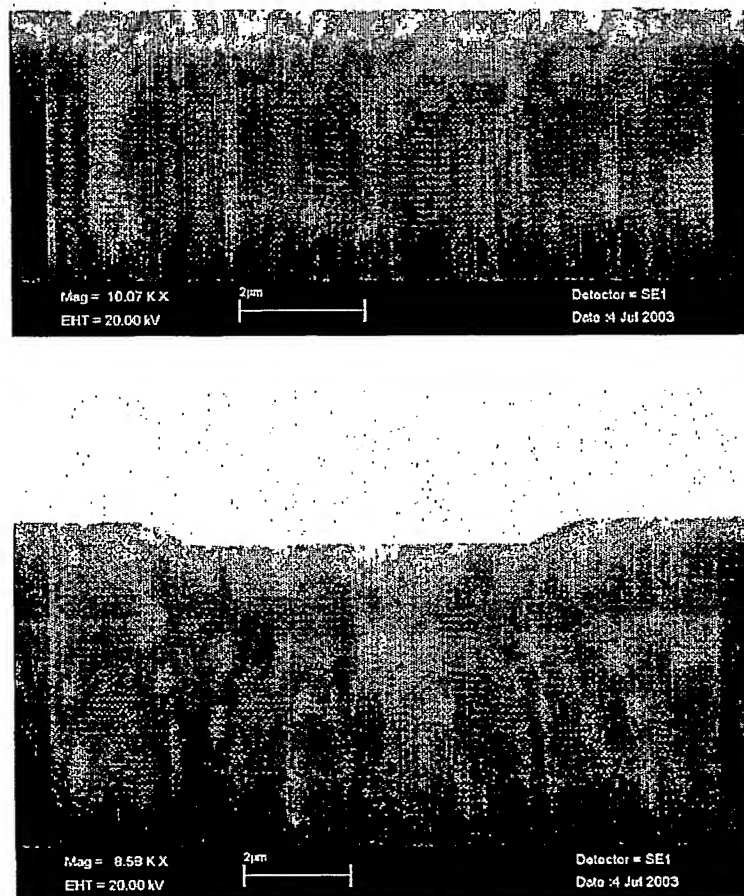


Fig. 12

Demonstration of conformal coatings on a structured substrate

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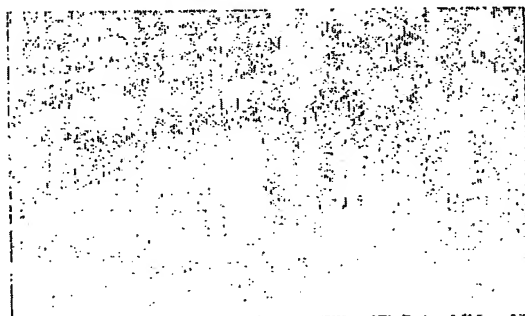
GeS<sub>x</sub> on CaF<sub>2</sub>



GeS<sub>x</sub> on N-PSK58



GeS<sub>x</sub> on Sapphire



GeS<sub>x</sub> on Silicate

Fig. 13

Demonstration of deposition on a variety of substrate materials

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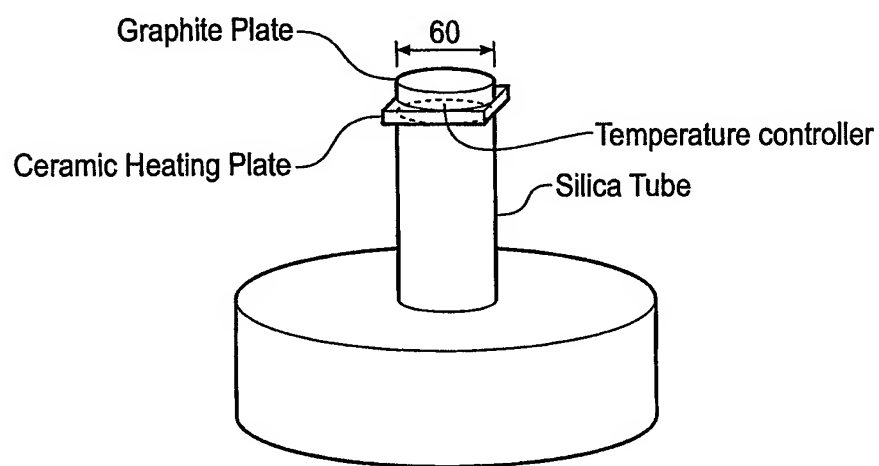


Fig. 14

Direct heating of substrate in a cold wall reactor

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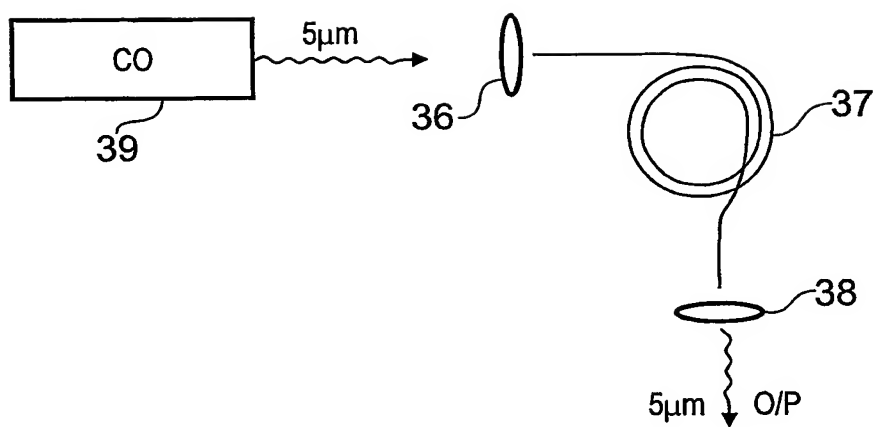


Fig. 15

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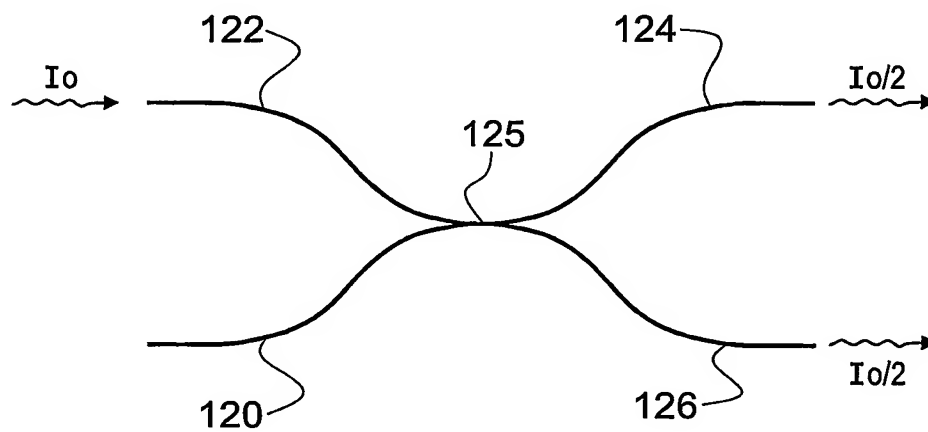


Fig. 16

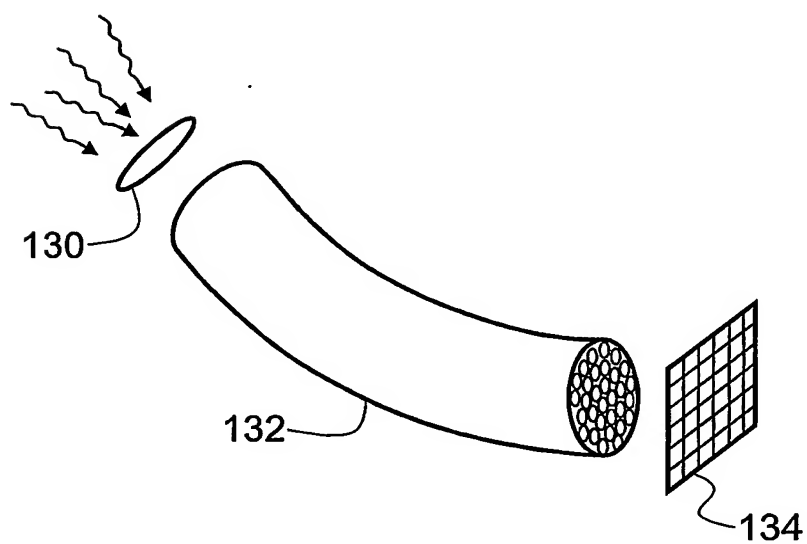


Fig. 17

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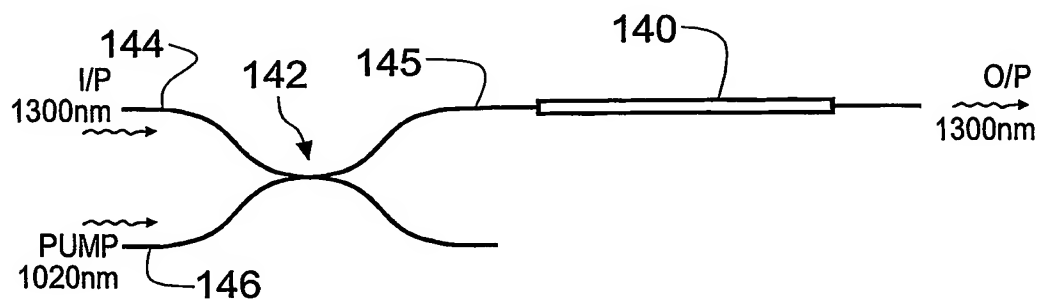


Fig. 18

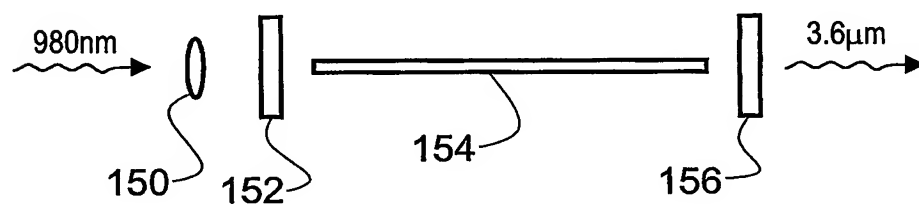


Fig. 19

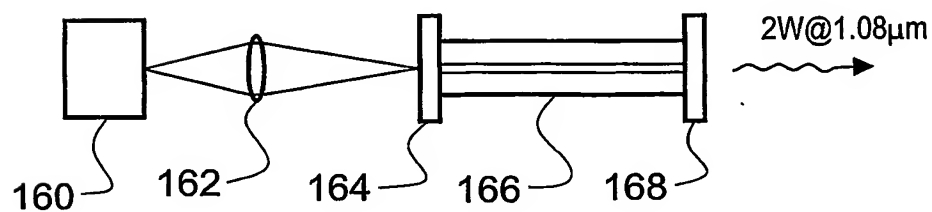


Fig. 20



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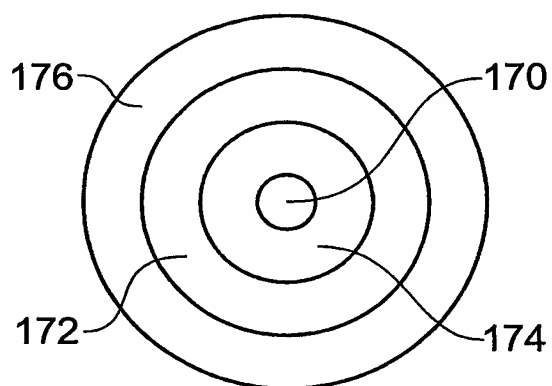


Fig. 21

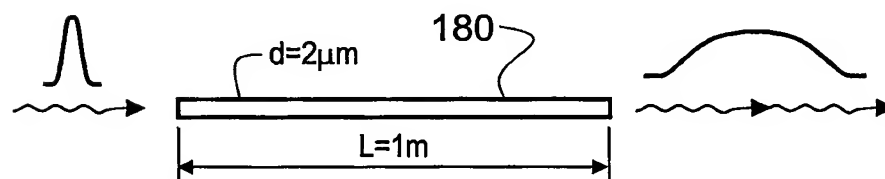


Fig. 22

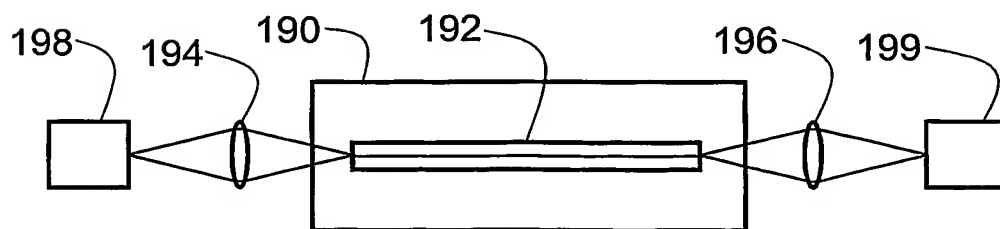


Fig. 23

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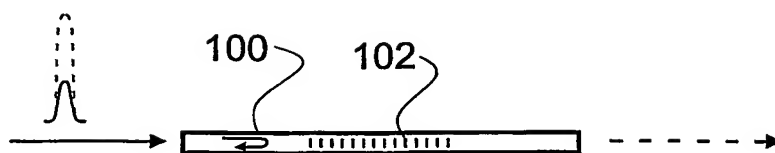


Fig. 24

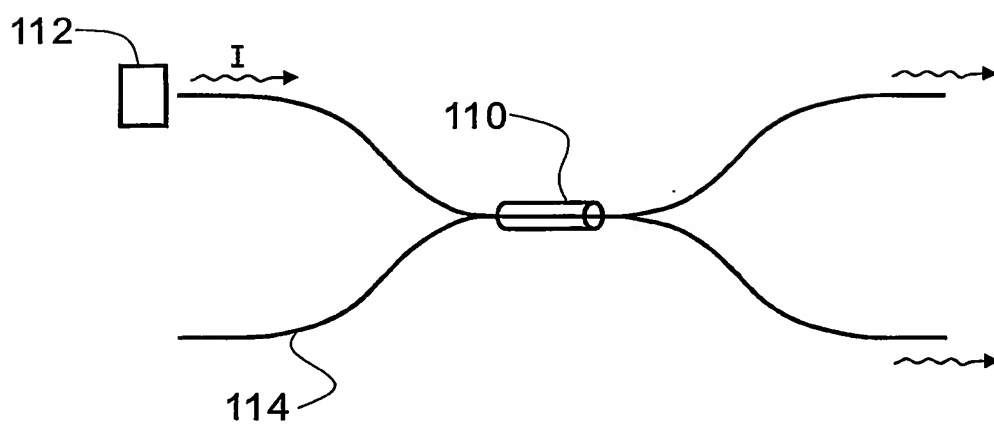


Fig. 25

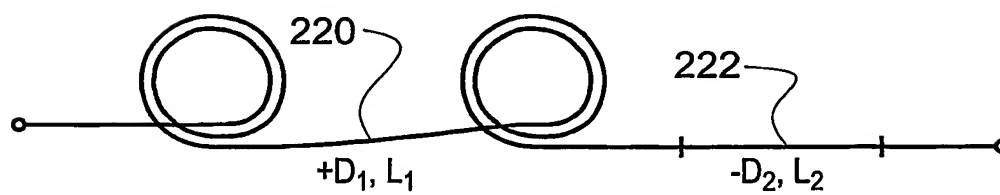


Fig. 26

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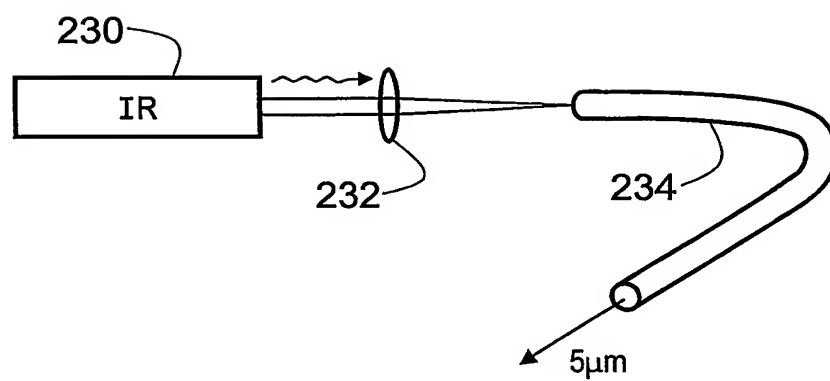


Fig. 27

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